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<120> Method and nucleic acids for the detection of microorganisms relevant to brewing

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<141> 2002-03-20

<150> PCT/EP00/08808
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<150> DE 199 45 964.9
<151> 1999-09-24

<160> 107

<170> PatentIn Ver. 2.1

<210> 1
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<212> DNA
<213> Lactobacillus brevis

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tgtttcgaga ataattgaat aatatctagt tttgagggaa gaagttctct tatagtgtgg 180
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cgccgatagt agttggggga tcgcccc 267

<210> 2
<211> 326
<212> DNA
<213> Lactobacillus lindneri

<400> 2
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gctcaggctt atgaaaaata agcatagtgt ggtggcgata gcctgaagga tacacctgtt 240
cccatgccga acacagaagt taagcttcag cacgccaaaa gtagttgggg gatcgccccc 300
tgcgaggata ggacgatggt catagc 326

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<211> 351
<212> DNA
<213> Lactobacillus casei

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aatacactgg ttcccgacaa cacaaaaaca acaatgatag ccagttttga gagcgcaaag 300
ttctcataag tgtggtggcg atagcaagaa ggatacacct gttcccatgc c 351

<210> 4
<211> 414
<212> DNA
<213> Lactobacillus paracasei

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gttctcataa gtgtggtggc gatagcaaga aggatacacc tgttcccatg ccgaacacag 360
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<212> DNA
<213> Lactobacillus paracasei

<400> 5
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cgccgagagt agttggtggg aaactgcctg cgaggata 338

<210> 6
<211> 317
<212> DNA
<213> Lactobacillus coryniformis ssp. coryniformis

<400> 6
ctcgagttga gatttcccat tcctttatgg aagtaagacc cctgagagat gatcaggtag 60
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cttaaccaag tagcatgtac gtagtgttag tttaagggca aagaaatgaa tatccagttt 180
tgagagcgca acgttctcag aaagtggtgt ggtggcgata gcaagaagga tacacctgtt 240
cccatgtcga acacagaagt taagcttctt agcgccgaga gtagttgggg gagcaccccc 300
tgcgaggata ggacgat 317

<210> 7
<211> 317
<212> DNA
<213> Lactobacillus coryniformis ssp. torquens

<400> 7
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cttaaccaag tagcatgtac gtggtgttag tttaagggca aagaaatgaa tatccagttt 180
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tgcgaggata ggacgat 317

<210> 8
<211> 336
<212> DNA
<213> Lactobacillus curvatus

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ttggtgggaa actacctgcg aggataggac gatggt 336

<210> 9
<211> 335
<212> DNA
<213> Pediococcus damnosus

<400> 9
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accacaaagt ggtgttctca agagaaggat tcgatattat ttagttttga gagaataaat 180
ttctttcaca cgagccgcgt aagtggatcg gagaagtgtg gtgacgatag tgagaaggat 240
acacctgttc ccatgtcgaa cacagaagtt aagcttctta acgccgagag tagttggggg 300
atcgctccct gcgaggatag gacgatggtc aatag 335

<210> 10
<211> 326
<212> DNA
<213> Pediococcus inopinatus

<400> 10
agatgagatt tcccattcca tttatggaag taagacccct gagagatgat caggtagata 60
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aaccacaaag tggtgttctc aaagagaaga tttcgatatt atttagtttt gagagaataa 180
atttctttca cacgagccgc ggaagtggat cggagaagtg tggtgacgat agtgagaagg 240
atacacctgt tcccatgtcg aacacagaag ttaagcttct taacgccgag agtagttggg 300
ggatcgctcc ctgcgaggat aggacg 326

<210> 11
<211> 403
<212> DNA
<213> Pectinatus cerevisiiphilus

<400> 11
aagtgctgaa agcatctaag cgtgaaacct gccttaagat gaggtttccc agagccgtaa 60
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gtacgaagcg gactggtact aataagccga gagcttaact taaaatcatc gaaaaaaatg 180
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gggaacgtga gagcgtaaaa ctgcggactt tggctcaaag agttaaagca tctggtgacg 300
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aaggtacttg gggggcgacc ccctgggaaa ataggacact gcc 403

<210> 12
<211> 434
<212> DNA
<213> Pectinatus frisingensis

<400> 12
aagtgctgaa agcatctaag cgtgaaacca gctttaagat gaggtttccc agaacgcaag 60
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gaggcactga aggccagaac atctggtggc gatacctgga tggatccacc tgttcccatt 360
ccgaacacag tagttaagca tccacaggcc gaaggtactt ggggggcagc cccctgcgaa 420
aataggacac cgcc 434

<210> 13
<211> 641
<212> DNA
<213> Pectinatus spec. DSM20764

<400> 13
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atacgaagcg gactggtact aataagccga gagcttaact taatttcatc tataaatgtt 180
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tttatttcta agtgctgaag cactaagaag ggcaaggaaa cgcgtcgttc gcgatgctca 480
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ggtacttggg gggcagcccc ctgcgagagt aggacatcgc c 641

<210> 14
<211> 495
<212> DNA
<213> Pectinatus spec. DSM20764

<400> 14
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gaacgtctaa ggaaacgcgg cgttcgtagg ctcactctgc gtacttcatc tctagactgc 360
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aagtaggaca ccgcc 495

<210> 15
<211> 546
<212> DNA
<213> Megasphaera cerevisiae

<400> 15
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cggtactaat agaccgagga cttgacttaa gcagggaacc cattttaaag aagcgaagcg 180
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gtttcgtagc agcgtaggct aacccaacca ccgctttcga agaaggcgaa tggtttgaaa 360
aagagtacat gcgaagaaac gacgaaagac tcacaaccaa aacatacaaa ctaagtagat 420

gacattagag tcacaccgat tgttaagatc cgaaatactt ttcgatgtag ttgtcaggat 480
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acacag 546

<210> 16
<211> 306
<212> DNA
<213> Megasphaera cerevisiae

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ccatgaagac gacatggtag ataggccggg agtggacgta cagtaatgta tggagcggac 120
cggtactaat agaccgagga cttgacttaa gcaaagaagc aatagaaaga accatgtaga 180
tggtgtaaga gttagacggg tagttaaggt ccgaaatact tttcgatgta gttgtcagga 240
tacgaatcct gaaacgaatt cagtggtgat ggctgcaggg accacctgtt cccataccga 300
acacag 306

<210> 17
<211> 449
<212> DNA
<213> Selenomonas lacticifex

<400> 17
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ccagtaagat tccttgaaga agacaaggta gataggttgg gagtgtaagc atcgtaaggt 120
gttcagcgga ccaatactaa taaatcgagg gcttaacttt acagacctgt ccaagaagcg 180
aagcggattg ggtaacaggt cgtatgcgaa aacatcccaa gaatcgagtc cgaagggcga 240
agatgattgg cagatgttga ccgctaataa tctagaatgt ttcgatacaa tttttcttct 300
gtatagtttt gagtggacat cgttcattca ataatatcca gtgacgatag ctgagtggta 360
ccacctgttc ccataccgaa cacagtagtt aagcactcat acgccgaaag tacttgtctg 420
gaaacgggct gcgagaatag gacgtcgcc 449

<210> 18
<211> 343
<212> DNA
<213> Selenomonas lacticifex

<400> 18
aagtgctgaa agcatctaag cgtgaagcct gtcccgagat gaagtatctc atggagtaat 60
ccagtaagat tccttgaaga agacaaggta gataggttgg gagtgtaagc atcgtaaggt 120
gttcagcgga ccaatactaa taaatcgagg gcttatctta ataatctaga atgtttcgat 180
acaatttttc ttctgtatag ttttgagtgg acatggttca ttcaataata tccagtgacg 240
atagctgagt ggtaccacct gttcccatac cgaacacagt agttaagcac tcatacgccg 300
aaagtacttg tctggaaacg ggctgcgaaa ataggacgcc gcc 343

<210> 19
<211> 395
<212> DNA
<213> Zymophilus raffinosivorans

<400> 19
aagtgctgaa agcatctaag cgtgaaacca gccttaagat gaggtttctc acagagcaat 60
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ctgaggcgaa agcggaaggc agcgatatct aaaaaaagaa tatctggtag tgatagccaa 300
gtggacccac ctgttcccat accgaacaca gtagttaagc acttgaacgt cgaaagtact 360

tgggtggaaa cgccctgcga aaataggaca ccgcc 395

<210> 20
<211> 395
<212> DNA
<213> Zymophilus paucivorans

<400> 20
aagtgctgaa agcatctaag cgtgaaacca gccttaagat gaggtttctc acagagcaat 60
ctggtaagac cccttgaaga agacaaggta gataggtcgg gagtggaagc gcagtaatgt 120
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tgggtggaaa cgccctggga aaataggaca ccgcc 395

<210> 21
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<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Lactobacillus brevis

<400> 21
ccaagtcaac aacgtagttg t 21

<210> 22
<211> 23
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Lactobacillus lindneri

<400> 22
gacacagggt taaatcaaag ttg 23

<210> 23
<211> 20
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Lactobacillus casei and Lactobacillus paracasei

<400> 23
aggtttctgc gactgcgaac 20

<210> 24
<211> 25
<212> DNA

<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Lactobacillus coryniformis

<400> 24
atgtacgtag tgttagttta agggc 25

<210> 25
<211> 20
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Lactobacillus curvatus

<400> 25
cttctcagtg cgcaagcaca 20

<210> 26
<211> 22
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Pediococcus damnosus

<400> 26
gtgttctcaa gagaaggatt cg 22

<210> 27
<211> 27
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Pediococcus inopinatus

<400> 27
gttctcaaag agaagatttc gatatta 27

<210> 28
<211> 23
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Pectinatus cerevisiiphilus

<400> 28
tgagagcgta aaactgcgga ctt 23

<210> 29
<211> 22
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Pectinatus frisingensis

<400> 29
cagataagtt tcctggttac tg 22

<210> 30
<211> 23
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Pectinatus spec. DSM 20764

<400> 30
cactaaggtg cagaaaagaa cgt 23

<210> 31
<211> 26
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Megasphaera cerevisiae

<400> 31
cttttcgatg tagttgtcag gatacg 26

<210> 32
<211> 25
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Selenomonas lacticifex

<400> 32
gttcattcaa taatatccag tgacg 25

<210> 33
<211> 23
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Zymophilus raffinosivorans

<400> 33
aactcttaag atggagyagt ctg 23

<210> 34
<211> 22
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Zymophilus paucivorans

<400> 34
actcttaaga tgagcagtct ga 22

<210> 35
<211> 21
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for the genus Pediococcus

<400> 35
agtstagtga tacatggagc g 21

<210> 36
<211> 22
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for the genus Pectinatus

<400> 36
gtgaagtttt gagtgtgcaa ga 22

<210> 37
<211> 22
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for the genus Megasphaera

<400> 37
gaccgaggac ttgacttaag ca 22

<210> 38
<211> 20
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific
sequence for the genus Selenomonas

<400> 38
tccagtgacg atagctgagt 20

<210> 39
<211> 25
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific
sequence for the genus Zymophilus

<400> 39
aagaatatct ggtagtgata gccaa 25

<210> 40
<211> 19
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 40
gtcgtgagac agttcggtc 19

<210> 41
<211> 21
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 41
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<210> 42
<211> 21
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 42
gctaccctgg ggataacagg c 21

<210> 43
<211> 21
<212> DNA

<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 43
atcgacgggg aggtttssca c 21

<210> 44
<211> 20
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 44
cacctcgatg tcggctcrtc 20

<210> 45
<211> 18
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 45
ccaagggttg ggctgttc 18

<210> 46
<211> 19
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 46
aagggccatc rctcaacgg 19

<210> 47
<211> 20
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 47
aagtgctgaa agcatctaag 20

<210> 48
<211> 23
<212> DNA

<213> Artifical sequence

<220>
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<220>
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<222> (9)..(10)
<223> "n" is inosine

<400> 48
tgtgttcgnn atgggaacag gtg 23

<210> 49
<211> 23
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 49
tgtgttcgga atgggaacag gtg 23

<210> 50
<211> 23
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 50
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<210> 51
<211> 23
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 51
tgtgttcggt atgggaacag gtg 23

<210> 52
<211> 23
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 52
tgtgttcgat atgggaacag gtg 23

<210> 53
<211> 23
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 53
tgtgttcggc atgggaacag gtg 23

<210> 54
<211> 23
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 54
tgtgttcgac atgggaacag gtg 23

<210> 55
<211> 19
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 55
ggcrrygtcc taytytcsc 19

<210> 56
<211> 19
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 56
ggcagtgtcc tactttccc 19

<210> 57
<211> 19
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 57
ggcagcgtcc tactttcgc 19

<210> 58
<211> 19
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 58
ggcagtgtcc tactttcgc 19

<210> 59
<211> 19
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 59
ggcagcgtcc tactttccc 19

<210> 60
<211> 18
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 60
gyttmrcttc yrdgttcg 18

<210> 61
<211> 18
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 61
gcttaacttc cgtgttcg 18

<210> 62
<211> 18
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 62
gcttaacttc tatgttcg 18

<210> 63

<211> 18
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 63
gcttaacttc tgtgttcg 18

<210> 64
<211> 18
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 64
gcttaacttc catgttcg 18

<210> 65
<211> 18
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 65
gcttaacttc cgggttcg 18

<210> 66
<211> 18
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 66
gcttaacttc taggttcg 18

<210> 67
<211> 18
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 67
gcttaacttc tgggttcg 18

<210> 68
<211> 18

<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 68
gcttaacttc caggttcg 18

<210> 69
<211> 18
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 69
gcttaacttc cgagttcg 18

<210> 70
<211> 18
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 70
gcttaacttc taagttcg 18

<210> 71
<211> 18
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 71
gcttaacttc tgagttcg 18

<210> 72
<211> 18
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: consensus sequence

<400> 72
gcttaacttc caagttcg 18

<210> 73
<211> 25

<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Lactobacillus brevis

<400> 73
tcgagaataa ttgaataata tctag 25

<210> 74
<211> 20
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Lactobacillus brevis

<400> 74
gagggaagaa gttctcttat 20

<210> 75
<211> 23
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Lactobacillus lindneri

<400> 75
aacagagaag atattatcta gtt 23

<210> 76
<211> 42
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Lactobacillus lindneri

<400> 76
ttgagagaac gaagttcgct caggcttatg aaaaataagc at 42

<210> 77
<211> 45
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Lactobacillus casei

<400> 77
ttcgttggcc gggttttggc caatggattc agggttctta tgtgg 45

<210> 78
<211> 58
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Lactobacillus casei

<400> 78
gcgtttcgat gaaatacact ggttcccgac aacacaaaaa caacaatgat agccagtt 58

<210> 79
<211> 29
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Lactobacillus casei and Lactobacillus paracasei

<400> 79
ttagaaaccg gagcataagc gggcctgag 29

<210> 80
<211> 46
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Lactobacillus paracasei

<400> 80
gcgtgatggc cgggctttgg ccattgcggt cagggtcctt atgtgc 46

<210> 81
<211> 46
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Lactobacillus paracasei

<400> 81
caagtacgtt aagttcaagg cagcaattaa acaatgatag ctagtt 46

<210> 82
<211> 44
<212> DNA
<213> Artifical sequence

<220>

<223> Description of the artifical sequence: specific sequence for Lactobacillus coryniformis

<400> 82
aaagaaatga atatccagtt ttgagagcgc aacgttctca gaaa 44

<210> 83
<211> 48
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Lactobacillus curvatus

<400> 83
aggtgcaatg ttaggctttt gaaatgaaat attacttatt atgcagtt 48

<210> 84
<211> 22
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Pediococcus damnosus

<400> 84
gccgcgtaag tggatcggag aa 22

<210> 85
<211> 22
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Pediococcus inopinatus

<400> 85
gccgcggaag tggatcggag aa 22

<210> 86
<211> 25
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: sequence for the detection of Pediococcus damnosus, Pediococcus inopinatus and Pediococcus parvulus

<400> 86
gagagaataa atttctttca cacga 25

<210> 87

<211> 39
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Pectinatus cerevisiiphilus

<400> 87
aaaatcatcg aaaaaaatgt ttggtctgag atttcttct 39

<210> 88
<211> 25
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Pectinatus cerevisiiphilus

<400> 88
cactctggtt gaagggcagg gaacg 25

<210> 89
<211> 39
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Pectinatus frisingensis

<400> 89
gatttcatca aaaaagagaa atgtttggtc agagatttt 39

<210> 90
<211> 33
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Pectinatus frisingensis

<400> 90
tatataccgg ctgaggtgct gaggcactga agg 33

<210> 91
<211> 36
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Pectinatus spec. DSM 20764

<400> 91

aatttcatct ataaatgttt ggtcctgatt tcttct 36

<210> 92
<211> 54
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Pectinatus spec. DSM 20764

<400> 92
agattagttc ctggtttact ttatatatga gcactaaggt gcagaaaaga acgt 54

<210> 93
<211> 20
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Pectinatus spec. DSM 20764

<400> 93
aggaaacgcg gcgttcgtaa 20

<210> 94
<211> 56
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Selenomonas lacticifex

<400> 94
taataatcta gaatgtttcg atacaatttt tcttctgtat agttttgagt ggacat 56

<210> 95
<211> 24
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Zymophilus raffinosivorans

<400> 95
gaggcgaaag cggaaggcag cgat 24

<210> 96
<211> 24
<212> DNA
<213> Artifical sequence

<220>

<223> Description of the artifical sequence: specific sequence for Zymophilus paucivorans

<400> 96
gaggcgaaag ctaaaggcag cgat 24

<210> 97
<211> 37
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for Megasphaera cerevisiae

<400> 97
aatcctgaaa cgaattcagt ggtgatggct gcaggga 37

<210> 98
<211> 20
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: sequence for detection of bacteria of the family Lactobacillaceae that are relevant to brewing

<400> 98
tatggaagta agacccctga 20

<210> 99
<211> 21
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: sequence for detection of bacteria of the family Lactobacillaceae that are relevant to brewing

<400> 99
agatgatcag gtagataggc t 21

<210> 100
<211> 21
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: sequence for detection of bacteria of the family Lactobacillaceae that are relevant to brewing

<400> 100
agatgatcag gtcgataggt t 21

<210> 101
<211> 21
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: sequence for detection of bacteria of the family Lactobacillaceae that are relevant to brewing

<400> 101
agatgatcag gtagataggt t 21

<210> 102
<211> 25
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: sequence for detection of bacteria of the family Lactobacillaceae that are relevant to brewing

<400> 102
tactaatcgg tcgaggactt aacca 25

<210> 103
<211> 26
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: sequence for detection of bacteria of the family Lactobacillaceae that are relevant to brewing

<400> 103
atactaatca gtcgaggact taacca 26

<210> 104
<211> 32
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for the genus Pectinatus

<400> 104
gaagcggact ggtactaata agccgagagc tt 32

<210> 105
<211> 32
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for the genus Selenomonas

<400> 105
cagcggacca atactaataa atcgagggct ta 32

<210> 106
<211> 38
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for the genus Zymophilus

<400> 106
agcggaccga tactaatagg tcgagggctt gacttaaa 38

<210> 107
<211> 32
<212> DNA
<213> Artifical sequence

<220>
<223> Description of the artifical sequence: specific sequence for the genus Megasphaera

<400> 107
ggagcggacc ggtactaata gaccgaggac tt 32